

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA
MATRICULATION EXAMINATION
INTERMEDIATE LEVEL
SEPTEMBER 2015

SUBJECT: PHILOSOPHY
DATE: 5th September 2015
TIME: 9.00 a.m. to 12.00 noon

Directions to Candidates

Answer **THREE** questions in all, **ONE** from **EACH** section. Questions carry equal marks.

Section A: Logic

1. (a) In not more than 10 lines explain and give an example of what is meant by ‘virtual bi-temporation’.
- (b) Express the following propositions symbolically:
- (i) Pippa or Alex went to Chinese lessons.
 - (ii) At least one of Pippa and Alex went to Chinese lessons.
 - (iii) Pippa and Alex did not both go to Chinese lessons.
 - (iv) Pippa went to Chinese lessons if Alex went.
- (c) Translate symbolically the following argument and check, using truth-tables, whether the implication involved is valid. Give a reason for your answer.
 If there is a concert and Elena wants to attend then she must buy a ticket. Therefore if there is a concert and Elena does not buy a ticket then she does not want to attend.
- (d) (i) Fill in the blanks: $A \rightarrow (B \wedge C) \gg$ _____ (\rightarrow is distributive over \wedge)
 $A \rightarrow (B \vee C) \gg$ _____ (transportation)
- (ii) Use one of the above equivalences to write down a proposition logically equivalent to the one below:
 If John had a holiday and he did not go fishing then he went swimming.
 (An English sentence which does not contain logical symbols is expected.)
- (e) The truth-tables of the formulae P, Q, R, S are given underneath.

a	b	c	P	Q	R	S
T	T	T	T	T	T	T
T	T	F	T	F	T	T
T	F	T	F	F	T	T
T	F	F	F	F	F	F
F	T	T	F	F	T	F
F	T	F	T	F	T	T
F	F	T	F	F	F	F
F	F	F	T	T	T	T

Arrange the four formulae in order such that moving from left to right each formula would imply the next.

- (f) Write down a **formula** constructed **only** out of the primary formulae a and b , the junctors \neg and \vee , and brackets and whose truth-table is:

a	b	formula
T	T	F
T	F	T
F	T	F
F	F	F

2. (a) How would you introduce the *adjunct* (\vee)?
- (b) Fill in the blanks:
- (i) _____ \times _____ is valid (commutativity of \wedge).
 - (ii) _____ \times _____ is valid (associativity of \vee).
 - (iii) _____ ($B \wedge C$) \times _____ is valid (distributivity of \vee over \wedge).
 - (iv) _____, $B < C \Rightarrow$ _____ is valid (transitivity of $<$).
- (c) (i) Complete the following implication:
 $\neg X \vee \neg Y <$ _____ (de Morgan).
- (ii) State the duality principle.
- (iii) Dualise the implication in (c)(i) above.
- (iv) Use the duality principle only to find out whether the answer to (c)(iii) is valid.
- (d) Translate symbolically the following argument and, by using truth tables, check whether the implication involved is valid.
 If Daniel went to the meeting, Clara went too.
 Daniel went to the meeting.
 Therefore Clara went.
- (e) (i) Which standard implication form, if any, is involved in the argument in 2(d) above?
 (ii) If in the argument in 2(d) above the first premise remains the same but the second is changed to “Daniel did not go to the meeting”, check by means of truth-tables whether the conclusion “Therefore Clara did not go to the meeting” can be validly derived.
- (f) For each of the following formulae write down one interpretation which is a model:
- (i) $x \vee (\neg y \wedge \neg z)$
 - (ii) $\neg(x \wedge y) \vee z$

Section B: Ethics

- 3. What can philosophy contribute to the moral status of the human embryo?
- 4. ‘Treat the earth well. We do not inherit the Earth from our ancestors; we borrow it from our children.’ Discuss.

Section C: History of Philosophy

- 5. What distinguishes the discipline of philosophy as it emerged in the 6th century BC from the mythology that preceded it?
X’jiddistingwi d-dixxiplina l-ġdida tal-filosofija li twieldet fis-sitt seklu qabel Kristu mill-mitologija li ġiet qabilha?
- 6. Explain the importance of virtue in Aristotle’s ethics.
Fisser l-importanza tal-virtù fl-etika ta’ Aristotle.